

AD-A059 803

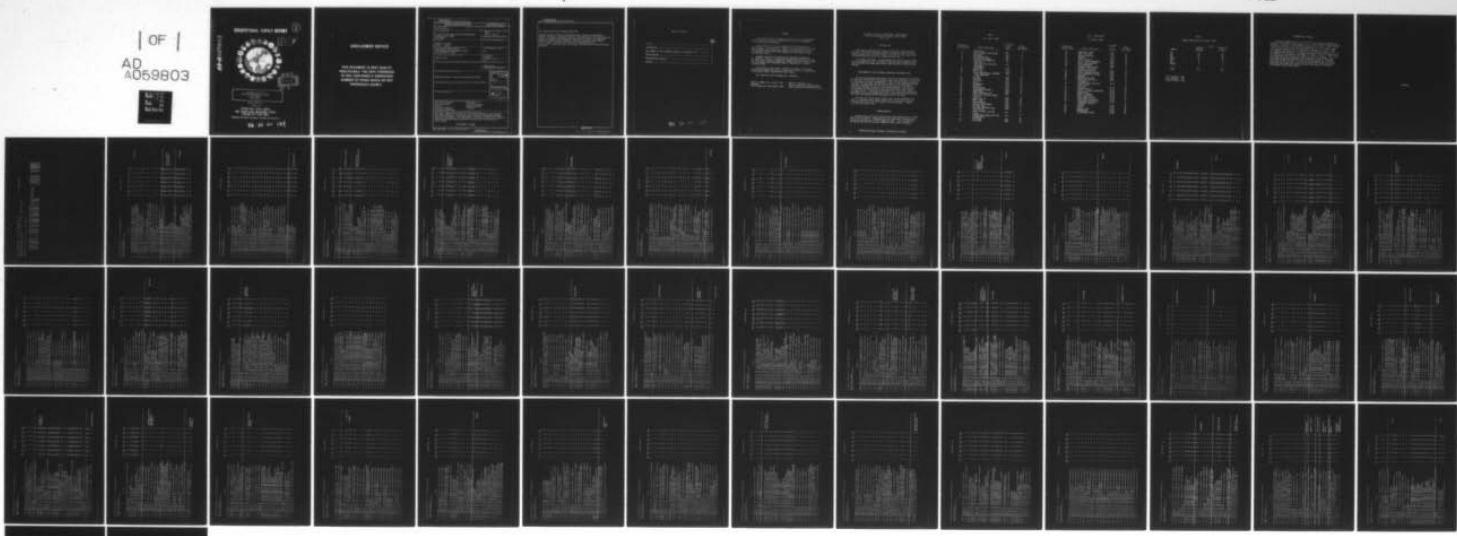
AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9
ELECTRONIC PRINCIPLES PRECISION PHOTOGRAPHIC SYSTEMS CAREER LAD--ETC(U)
MAY 77 T J O'CONNOR, W F KASPER

UNCLASSIFIED

AFPT-90-404-222

NL

| OF |
AD
A059803



END
DATE
FILED
12-78
DDC

AD-A059803

OCCUPATIONAL SURVEY REPORT

(1)

LEVEL II



ELECTRONIC PRINCIPLES
PRECISION PHOTOGRAPHIC SYSTEMS
CAREER LADDER
AFSC 404X0

AFPT 90-404-222

15 MAY 1977

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

78 10 06 13?

DISCLAIMER NOTICE

**THIS DOCUMENT IS BEST QUALITY
PRACTICABLE. THE COPY FURNISHED
TO DDC CONTAINED A SIGNIFICANT
NUMBER OF PAGES WHICH DO NOT
REPRODUCE LEGIBLY.**

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM												
1. REPORT NUMBER AFPT 90-404-222	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER												
4. TITLE (and Subtitle) Electronic Principles Precision Photographic Systems Career Ladder AFSC 404X0		5. TYPE OF REPORT & PERIOD COVERED FINAL Jul 76 - Oct 76												
7. AUTHOR(s) Thomas J. O'Connor Walter F. Kasper		6. PERFORMING ORG. REPORT NUMBER												
9. PERFORMING ORGANIZATION NAME AND ADDRESS Occupational Survey Branch USAF Occupational Measurement Center Lackland AFB TX 78236		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS N/A												
11. CONTROLLING OFFICE NAME AND ADDRESS SAME AS ITEM 9		12. REPORT DATE 15 May 77												
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 44												
		15. SECURITY CLASS. (of this report) UNCLASSIFIED												
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE												
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		<p>ACCESSION for</p> <table border="1"> <tr> <td>NTIS</td> <td>White Section <input checked="" type="checkbox"/></td> </tr> <tr> <td>DDC</td> <td>Buff Section <input type="checkbox"/></td> </tr> <tr> <td colspan="2">UNANNOUNCED</td> </tr> <tr> <td colspan="2">JUSTIFICATION _____</td> </tr> </table> <p>BY</p> <table border="1"> <tr> <td>DIST.</td> <td>AVAIL. and/or SPECIAL</td> </tr> <tr> <td>A</td> <td>23</td> </tr> </table>	NTIS	White Section <input checked="" type="checkbox"/>	DDC	Buff Section <input type="checkbox"/>	UNANNOUNCED		JUSTIFICATION _____		DIST.	AVAIL. and/or SPECIAL	A	23
NTIS	White Section <input checked="" type="checkbox"/>													
DDC	Buff Section <input type="checkbox"/>													
UNANNOUNCED														
JUSTIFICATION _____														
DIST.	AVAIL. and/or SPECIAL													
A	23													
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)														
18. SUPPLEMENTARY NOTES														
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)														
<table> <tr> <td>Electronic principles</td> <td>Electronics</td> </tr> <tr> <td>Basic electronics</td> <td>Air Force training</td> </tr> <tr> <td>Avionics</td> <td>Teaching methods</td> </tr> <tr> <td>Electronic equipment</td> <td>Training</td> </tr> <tr> <td>Electronic technicians</td> <td></td> </tr> </table>			Electronic principles	Electronics	Basic electronics	Air Force training	Avionics	Teaching methods	Electronic equipment	Training	Electronic technicians			
Electronic principles	Electronics													
Basic electronics	Air Force training													
Avionics	Teaching methods													
Electronic equipment	Training													
Electronic technicians														
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)														
<p>This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Precision Photographic Systems Specialty (AFSC 404X0). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.</p>														
CONTINUED (OVER)														

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(*When Data Entered*)

This specialty has the following functions:

Prepares for use, performs operational checks, inspects, troubleshoots, repairs, overhauls, calibrates, modifies, and tests ground electronic precision imagery, and audiovisual systems and associated electronic test equipment. Maintains inspection and maintenance records and completes maintenance forms. Prepares relocation facilities for transportation and installation. Supervises precision imagery and audiovisual media maintenance personnel.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(*When Data Entered*)

TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE -----	2
INTRODUCTION -----	3
DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI) -----	3
ADMINISTRATION -----	3
PRESENTATION OF RESULTS -----	7
APPENDIX -----	8

78 10 06 13?

PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Precision Photographic Systems Specialty, AFSC 404X0.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Major Walter F. Kasper. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Cristal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
Chief, Occupational Survey Branch
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
PRECISION PHOTOGRAPHIC SYSTEMS CAREER LADDER
AFSC 404X0

INTRODUCTION

This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Precision Photographic Systems Specialty (AFSC 404X0). The data for this report were collected during the period July through October 1976.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands.

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 404X0 airmen worldwide. Responses from 252 individuals represented 68 percent of the total of all AFSC 404X0 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

TABLE 1
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	9
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	12
15	RELAYS	E294	12
16	MICROPHONES	F314	13
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	14
20	TRANSISTORS	G404	16
21	TRANSISTOR AMPLIFIERS	G428	17
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	20
25	MULTIVIBRATORS	I539	21
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	23
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	24
31	AM SYSTEMS	K638	24
32	FM SYSTEMS	K666	25

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER-</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	26
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	28
38	USE OF SIGNAL GENERATORS	M769	28
39	MOTORS AND GENERATORS	M779	29
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	30
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	31
44	PULSE MODULATION SYSTEMS	0875	32
45	ANTENNAS	0914	33
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	36
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	37
49	REGISTERS	Q1110	40
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	42
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	44
62	DB AND POWER RATIOS	U1255	44

TABLE 2
COMMAND REPRESENTATION OF SURVEY SAMPLE

<u>COMMAND</u>		404X0	
	<u>PERCENT ASSIGNED</u>		<u>PERCENT OF SAMPLE</u>
TAC	29		31
SAC	19		20
MAC	17		20
USAFE	15		12
ATC	7		6
AFSC	4		4
OTHERS	9		7
<hr/>	<hr/>	<hr/>	<hr/>
TOTAL	100		100

Total Assigned - 369
 Total Sampled - 252
 Percent Sampled - 68%

PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the seven selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Resistance (pp. 3-4) and Soldering (p. 12) to low in areas such as AM and FM Systems (pp. 24-25). Additional AFSC 404X0 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PCT MRS RESPONDING YES TO ITEMS* SELECTED GPS

TABULATION OF PERCENT RESPONDING YES TO ITEMS BY SELECTED GROUPS
IN THE QU4D CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GPSUM7 PAGE 1

GROUP IDENTITY = SPC003	ALL AIRMEN, DAFSC 40450 ✓	CONTAINING 181 MEMBERS.
GROUP IDENTITY = SPC007	ALL DAFSC 40450 AIRMEN STATIONED INSIDE CONUS	CONTAINING 130 MEMBERS.
GROUP IDENTITY = SPC008	ALL DAFSC 40450 AIRMEN STATIONED OUTSIDE CONUS	CONTAINING 36 MEMBERS.
GROUP IDENTITY = SPC009	ALL AIRMEN, DAFSC 40450 , IN TAC	CONTAINING 56 MEMBERS.
GROUP IDENTITY = SPC010	ALL AIRMEN, DAFSC 40450 , IN MAC	CONTAINING 37 MEMBERS.
GROUP IDENTITY = SPC011	ALL AIRMEN, DAFSC 40450 , IN SAC	CONTAINING 36 MEMBERS.
GROUP IDENTITY = SPC012	ALL AIRMEN, DAFSC 40450 , IN USAFE	CONTAINING 21 MEMBERS.

PCT MARS RESPONDING YES TO ITEMS* SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 2

DY-TSK

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
A	1 A1-U1 DO YOU USE AN INSTRUMENT, SUCH AS METER OR AN OSCILLOSCOPE, IN WHICH IT IS NECESSARY TO AMPLIFY OR	51	55	39	52	59	47	43
A	2 A1-U2 DO YOU USE A PUBLICATION, SUCH AS A TECHNICAL ORDER OR MAINTENANCE MANUAL, IN WHICH IT IS NECESSARY TO REARRANGE AND SOLVE FORMULAS OR EQUATIONS.	26	28	19	34	22	25	14
A	3 A1-U3 DO YOU FIND THE SQUARE ROOT OF A QUANTITY.	17	20	8	16	22	11	5
A	4 A1-U4 DO YOU SOLVE FOR AN UNKNOWN QUANTITY.	4	5	3	2	11	3	5
A	5 A1-U5 DO YOU CONVERT NUMBERS TO LOGARITHMS.	15	17	11	13	19	6	14
A	6 A1-U6 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.	2	2	3	0	3	0	5
A	7 A1-U7 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF	2	2	3	0	5	0	5
A	8 A1-U8 DO YOU SOLVE QUADRATIC EQUATIONS.	3	5	0	2	5	0	0
A	9 A1-U9 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS (THIS IS THE LOGARITHM SYSTEM WHICH USES THE NUMBER 2.718 AS THE BASE).	3	5	0	2	8	3	0
A	10 A1-U10 DO YOU WORK WITH VECTOR QUANTITIES, SUCH AS AUDING ON SUBTRACTING TWO VECTORS.	3	3	3	0	3	3	5
A	11 A1-U11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.	3	3	0	5	0	0	5
A	12 A1-U12 DO YOU DETERMINE AREAS OF PLANE FIGURES, SUCH AS AREAS OF CIRCLES OR TRIANGLES.	13	15	8	7	19	11	10
A	13 A1-U13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.	4	5	3	0	1	0	5
A	14 A1-U14 DO YOU SOLVE OR USE PROPORTIONS.	9	10	11	5	14	0	14
A	15 A2-U1 DO YOU USE THE TERM VOLTAGE OR VOLT.	87	86	97	84	92	75	95
A	16 A2-U2 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).	31	32	28	32	30	19	38
A	17 A2-U3 DO YOU USE THE TERM OHM.	87	87	94	88	89	75	90
A	18 A2-U4 DO YOU USE THE TERM IONE.	14	14	19	7	14	6	24
A	19 A2-U5 DO YOU USE THE TERM DYNE.	6	5	6	2	8	6	5
A	20 A2-U6 DO YOU USE THE TERM AMPERE.	83	84	89	84	86	69	81
A	21 A2-U7 DO YOU USE THE TERM NEUTRON.	13	15	6	11	14	6	10
A	22 A2-U8 DO YOU USE THE TERM COULOMB.	7	9	3	5	5	8	5
A	23 A2-U9 DO YOU USE THE TERM PROTON.	12	13	8	11	14	6	14
A	24 A3-U1 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.	73	72	83	70	67	81	
A	25 A3-U2 DO YOU INSPECT RESISTORS.	79	78	86	79	61	67	81
A	26 A3-U3 DO YOU CLEAN RESISTORS.	56	59	50	55	68	42	48
A	27 A3-U4 DO YOU ADJUST RESISTORS.	61	61	67	57	73	44	67
A	28 A3-U5 DO YOU CHECK OHMIC VALUE OF RESISTORS.	77	78	86	79	76	64	61
A	29 A3-U6 DO YOU REMOVE OR REPLACE RESISTORS.	77	78	81	79	73	67	86
A	30 A3-U7 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS IN YOUR PRESENT JOB.	22	24	19	23	19	14	24
A	31 A3-U8 DO YOU USE OR REFER TO RESISTOR SYMBOLS, SUCH AS FOR FIXED RESISTORS OR FOR TAPPED RESISTORS.	62	64	67	59	65	50	48
A	32 A3-U9 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK WITH AS CARRON, FIXED WIRE, SLIDE TAP, RHEOSTAT OR	65	68	61	68	62	53	52

PCT HOURS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 3

	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
DY-TSK							
A 33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.	74	78	75	71	81	64	71
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.	65	68	67	59	65	64	67
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.	19	23	8	25	27	6	10
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY,	37	39	25	36	54	19	29
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS: BATTERY,	83	82	92	82	78	72	90
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	42	45	36	43	43	33	38
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	41	45	33	43	43	31	38
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	38	41	31	36	38	33	33
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	30	32	28	30	32	17	29
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	39	40	36	41	38	25	38
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	38	40	33	39	38	25	38
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	37	40	31	39	35	25	33
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	34	35	33	36	32	19	38
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	29	30	28	32	30	11	29
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	35	38	31	41	30	22	38
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	34	37	28	38	30	22	38
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	33	37	25	38	27	25	33
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	29	32	25	34	24	19	33
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	24	27	19	30	22	11	24
B 52 B1-01 DO YOU MEASURE RESISTANCE.	91	92	94	95	84	89	90
B 53 B1-02 DO YOU REPAIR AN OMMETER.	7	7	11	9	5	3	14
B 54 B1-03 DO YOU MEASURE VOLTAGE.	92	92	94	95	81	94	95
B 55 B1-04 DO YOU REPAIR A VOLTMETER.	2	2	6	0	5	0	5
B 56 B1-05 DO YOU REPAIR AN AMMETER.	2	2	3	2	5	0	0
B 57 B1-06 DO YOU MEASURE CURRENT.	77	78	62	66	64	76	76
B 58 B1-07 DO YOU USE A MULTIMETER.	91	92	93	81	97	66	66

PCT MARS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 4

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
B 59 B1-U8 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.		5	5	3	2	8	3	0
B 60 B1-U9 DO YOU READ SCHEMATICS.		96	96	97	96	89	100	100
B 61 B2-O1 DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).		36	37	42	36	30	28	33
B 62 B2-O2 DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.		39	42	36	41	30	33	29
B 63 B2-O3 DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).		42	44	36	43	41	33	33
B 64 B2-O4 DO YOU USE OR REFER THE TERM WAVE LENGTH.		29	31	28	36	19	22	29
B 65 B2-O5 DO YOU USE OR REFER THE TERM FREQUENCY.		41	42	44	45	32	28	43
B 66 B2-O6 DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.		13	14	14	11	16	11	10
B 67 B3-O1 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKE COILS IN YOUR PRESENT JOB.		25	27	17	32	22	9	10
B 68 B3-U2 DO YOU INSPECT INDUCTORS.		24	27	14	36	19	8	10
B 69 B3-U3 DO YOU CLEAN INDUCTORS.		16	18	11	21	14	3	10
B 70 B3-U4 DO YOU ADJUST INDUCTORS.		13	15	6	21	14	0	5
B 71 B3-U5 DO YOU REMOVE OR REPLACE INDUCTORS.		22	25	14	30	19	8	10
B 72 B3-U6 DO YOU USE OR REFER TO INDUCTANCE.		18	22	11	29	14	6	5
B 73 B3-U7 DO YOU USE OR REFER TO HENRIES.		14	16	8	21	14	3	5
B 74 B3-U8 DO YOU USE OR REFER TO INDUCTIVE REACTANCE.		14	17	11	21	11	6	5
B 75 B3-U9 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.		2	2	0	4	3	0	0
B 76 B3-U10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.		2	3	0	5	3	0	0
B 77 B3-U11 DO YOU USE OR REFER TO EDDY CURRENT LOSSES IN INDUCTORS.		3	4	0	5	5	0	0
B 78 B3-U12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE INDUCTANCE OF A COIL.		5	7	0	7	8	0	0
B 79 B3-U13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE INDUCTANCE OF A COIL.		6	8	0	7	6	0	0
B 80 B3-U14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO THE INDUCTANCE OF A COIL.		7	8	6	9	8	0	5
B 81 B3-U15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE INDUCTANCE OF A COIL.		4	6	0	5	6	0	0
B 82 B3-U16 DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.		4	6	0	9	5	0	0
B 83 B3-U17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.		6	10	3	16	8	0	0
B 84 B3-U18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.		6	11	3	18	8	0	0
B 85 B3-U19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.		8	10	3	16	8	0	0
B 86 B3-U20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.		9	12	6	18	8	0	10
B 87 B3-U21 DO YOU CALCULATE INDUCTIVE REACTANCE.		4	10	3	14	8	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
B 88	B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO POWER INDUCTORS.	6	7	6	11	8	0	5
B 89	B3-23 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS.	13	15	11	20	14	0	5
B 90	B3-24 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS.	7	9	0	9	5	0	0
B 91	B3-25 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS ON YOUR PRESENT JOB.	2	2	3	0	5	0	0
C 92	CT-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS AND CAPACITIVE REACTANCE	72	75	67	64	81	69	57
C 93	C1-02 DO YOU INSPECT CAPACITORS.	66	70	53	70	73	58	38
C 94	C1-03 DO YOU CLEAN CAPACITORS.	41	46	25	38	57	33	19
C 95	C1-04 DO YOU ADJUST CAPACITORS.	17	21	8	16	32	6	10
C 96	C1-05 DO YOU TEST CAPACITORS.	65	70	50	64	73	58	43
C 97	C1-06 DO YOU DISCHARGE CAPACITORS.	69	74	53	63	84	64	43
C 98	C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.	71	74	61	70	61	61	52
C 99	C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.	9	11	6	5	11	8	10
C 100	C1-09 DO YOU USE OR REFER TO ORBITAL STRESS OF ELECTRONS IN A DIELECTRIC.	2	3	0	2	8	0	0
C 101	C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.	36	41	28	29	35	39	19
C 102	C1-11 DO YOU USE OR REFER TO CAPACITANCE.	44	45	47	43	38	39	43
C 103	C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT.	4	5	0	7	8	0	0
C 104	C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.	38	42	28	39	38	31	19
C 105	C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE.	23	28	11	29	24	17	5
C 106	C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES.	25	29	17	25	27	14	10
C 107	C1-16 THE CAPACITORS YOU WORK WITH IN DC CIRCUITS.	61	62	61	61	68	50	52
C 108	C1-17 THE CAPACITORS YOU WORK WITH ARE IN AC CIRCUITS.	69	71	61	66	76	61	48
C 109	C1-18 THE CAPACITORS YOU WORK WITH ARE IN CIRCUITS WITH BOTH DC AND AC.	50	48	56	50	54	36	48
C 110	C1-19 THE CAPACITORS YOU WORK WITH ARE DON'T REMEMBER WHICH CIRCUITS.	18	19	14	14	22	22	14
C 111	C1-20 DO YOU CALCULATE CAPACITANCE FOR A PARTICULAR CAPACITOR USING FORMULAS.	9	12	0	11	14	6	0
C 112	C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL	4	5	0	5	11	0	0
C 113	C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL	4	4	0	4	11	0	0
C 114	C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES.	15	15	11	18	11	19	10
C 115	C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL.	14	15	11	14	11	19	10
C 116	C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS.	13	14	11	16	11	14	10
C 117	C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS, IT ONLY	13	16	3	13	16	11	5

PCT WORKS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 6

DY-TSK

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.		16	17	8	13	19	11	10
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO CAPACITIVE REACTANCE.		9	9	6	11	11	3	10
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.		10	12	8	18	11	3	10
C 121 C1-30 DO YOU WORK WITH ROTOR-STATOR CAPACITORS (VARIABLE)?		18	19	11	14	24	8	10
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS?		10	10	6	4	16	8	5
C 123 C1-32 DO YOU WORK WITH ELECTROLYtic CAPACITORS (FIXED).		48	49	39	39	49	44	29
C 124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).		38	43	25	41	30	28	14
C 125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED)?		33	35	22	25	32	31	19
C 126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED)?		44	48	31	46	41	36	19
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS?		26	28	22	27	46	17	29
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB?		51	55	39	43	51	53	33
C 129 C2-02 DO YOU INSPECT TRANSFORMERS?		52	58	33	48	51	50	29
C 130 C2-03 DO YOU CLEAN TRANSFORMERS.		43	48	25	45	46	36	19
C 131 C2-04 DO YOU ADJUST TRANSFORMERS.		24	27	17	23	38	8	10
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.		43	46	33	36	51	39	29
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.		52	58	36	48	51	50	33
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING?		9	11	3	7	22	6	5
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (IM)?		4	5	3	2	8	6	5
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M ?		4	5	0	5	8	0	0
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS?		6	5	6	4	11	3	5
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.		8	9	6	7	11	6	10
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.		4	5	0	2	8	6	0
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.		3	4	0	4	8	3	0
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.		15	15	17	13	14	11	5
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.		48	52	36	41	46	50	29
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.		12	12	0	7	19	8	0
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.		3	3	0	4	11	0	0
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER?		22	26	11	23	32	17	10
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE?		45	50	28	45	49	39	24
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE?		45	49	31	45	46	36	29
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES?		40	44	31	39	43	36	24
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR		17	19	6	16	22	14	5

PCT MARS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 7

	DY=TSK	SPC U03	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN?	26	26	22	21	24	31	19	
C 151 C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS.	47	50	36	41	41	47	29	
C 152 C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS.	34	36	28	29	32	28	19	
C 153 C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	34	38	22	27	35	31	14	
C 154 C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS.	37	41	25	34	38	31	19	
C 155 C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	20	21	17	20	22	17	5	
C 156 C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	24	26	17	20	24	28	5	
C 157 C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS.	28	30	25	27	27	27	19	
C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH.	15	15	11	14	19	17	10	
C 160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS.	10	12	3	9	22	6	0	
C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	6	6	0	2	14	6	0	
C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS.	6	6	0	4	14	3	0	
C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS.	12	14	6	11	22	6	5	
C 165 C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS.	12	12	11	11	19	3	14	
C 166 C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS.	8	8	8	5	14	3	14	
C 167 C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS.	6	5	6	5	11	0	10	
C 168 C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS.	10	9	8	11	14	3	10	
C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMERS.	11	11	8	13	14	3	10	
C 170 C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING.	5	5	3	4	11	0	5	
C 171 C3-U1 DO YOU USE OR REFER TO PERMANENT MAGNETS.	28	32	19	29	32	19	24	
C 172 C3-U2 DO YOU USE OR REFER TO TEMPORARY MAGNETS.	20	24	11	23	22	17	14	
C 173 C3-U3 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS.	8	8	3	7	14	6	0	MAGNETISM
C 174 C3-U4 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS.	6	5	3	5	14	3	0	

PCT MARKS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 8

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.	7	8	3	7	14	3	0	5
C 176 C3-U6 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.	7	7	6	5	16	3	5	14
C 177 C3-U7 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE ON FLUX.	12	12	11	13	14	4	0	0
C 178 C3-05 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.	4	4	3	4	11	0	0	0
C 179 C3-U9 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.	4	4	3	4	11	0	0	0
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.	8	8	8	9	11	3	5	0
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY.	6	6	3	5	14	3	0	0
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.	39	38	42	30	38	33	43	0
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS AROUND STRAIGHT WIRES.	22	22	19	21	30	17	19	0
C 184 C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.	19	18	17	18	30	11	14	0
C 185 DI-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.	12	13	6	16	11	6	5	0
D 186 DI-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.	3	3	3	2	8	3	5	RCL CIRCUITS
D 187 DI-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.	2	2	0	2	8	0	0	
D 188 DI-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.	3	3	3	2	8	0	5	
D 189 DI-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.	3	2	3	0	8	0	5	
D 190 DI-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.	2	2	3	0	8	0	5	
D 191 DI-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.	8	8	3	9	8	3	5	
D 192 DI-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.	3	2	3	0	8	0	5	
D 193 DI-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.	4	4	3	0	8	3	5	
D 194 DI-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.	4	5	3	0	8	3	5	
D 195 DI-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.	3	3	2	8	3	5		
D 196 DI-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.	3	2	3	0	8	0	5	
D 197 DI-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	5	5	3	7	8	0	5	
D 198 DI-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.	3	2	3	4	5	0	5	
D 199 DI-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.	5	5	3	5	8	0	5	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
D 200 DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.	4	3	3	4	8	0	5	
D 201 DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.	2	1	3	0	5	0	5	
D 202 DI-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING WITH RCL CIRCUITS.	2	1	3	0	5	0	5	
D 203 DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.	2	2	0	0	5	3	0	
D 204 DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	6	6	3	9	5	3	5	
D 205 DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE	2	2	0	0	8	3	0	
D 206 DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.	4	4	3	4	8	3	5	
D 207 DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.	5	5	3	5	11	3	5	
D 208 DI-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.	2	2	3	0	8	0	5	
P 209 DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.	5	5	3	5	11	3	5	
D 210 DI-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.	2	2	3	0	8	0	5	
D 211 DI-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.	3	2	3	0	8	3	5	
D 212 DI-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.	2	2	3	0	8	0	5	
D 213 DI-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.	3	2	6	0	8	0	5	
D 214 DI-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.	6	5	6	7	6	3	5	
D 215 DI-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.	2	2	0	0	8	0	0	
D 216 DI-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.	2	2	0	0	8	3	0	
D 217 DI-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.	4	4	3	4	8	3	5	
D 218 DI-34 DO YOU CHECK CAPACITORS USING OMMETERS.	15	17	8	21	16	4	0	
D 219 DI-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.	9	11	6	11	11	8	5	
D 220 DI-36 DO YOU CHECK INDUCTORS USING OMMETERS.	12	13	6	16	16	0	0	
D 221 DI-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.	8	8	6	9	11	3	5	
C 222 DI-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\Theta_{TAU} = \Theta_0$, $PF = 1$, AND $PA = PT$ FOR RESONANT CIRCUITS.	2	2	0	0	8	0	0	
D 223 DI-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.	3	2	3	2	8	0	5	
D 224 DI-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE	2	2	0	0	8	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

TYPE-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
D 225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.	2	2	0	0	8	0	0
D 226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK	3	2	6	2	8	0	5
D 227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q.	2	2	3	0	8	0	0
D 228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT	2	2	3	0	6	0	5
D 229 D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR	6	0	7	8	6	6	0
D 230 D2-02 DO YOU WORK WITH USE, OR REFER TO TIME CONSTANTS.	5	6	0	4	8	6	0
D 231 D2-03 DO YOU WORK WITH USE, OR REFER TO AVAILABLE VOLTAGE.	4	5	0	4	8	0	0
D 232 D2-04 DO YOU WORK WITH USE, OR REFER TO TRANSIENT INTERVALS.	3	4	0	4	8	0	0
D 233 D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE UNIVERSAL TIME CONSTANT CHARTS.	6	7	0	7	8	3	0
D 234 D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS.	3	4	0	0	6	3	0
D 235 D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A	2	2	0	0	8	0	0
D 236 D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT	2	2	0	0	8	0	0
D 237 D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND	3	3	0	4	6	0	0
D 238 D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR YOUR PRESENT JOB.	3	3	0	2	8	0	0
D 239 D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON	17	15	17	23	16	3	10
D 240 D3-02 DO YOU INSPECT FILTER CIRCUITS.	15	15	11	23	11	3	10
D 241 D3-U3 DO YOU CLEAN FILTER CIRCUITS.	10	9	11	11	14	0	10
D 242 D3-U4 DO YOU ALIGN OR ADJUST FILTER CIRCUITS.	10	10	8	13	14	0	5
D 243 D3-U5 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT.	12	10	17	13	11	3	10
D 244 D3-U6 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS.	11	9	14	14	11	3	10
D 245 D3-U7 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.	13	13	14	16	14	3	10

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	Y-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
C 246 D3-U8 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.	12	11	14	16	14	3	10	5
D 247 D3-U9 DO YOU WORK ON LOW PASS FILTERS.	6	5	6	4	11	3	5	5
D 248 D3-10 DO YOU WORK ON HIGH PASS FILTERS.	7	6	6	5	11	3	5	5
D 249 D3-11 DO YOU WORK ON BANDPASS FILTERS.	4	4	3	4	11	0	5	5
D 251 D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER	3	3	0	2	11	0	0	0
D 250 D3-12 DO YOU WORK ON BAND-REJECT FILTERS.	10	13	3	18	14	0	0	0
D 252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.	4	4	3	2	11	3	5	5
D 253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.	3	4	0	2	11	3	0	0
D 254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.	3	4	0	2	11	3	0	0
D 255 D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.	10	12	6	14	14	0	0	0
D 256 D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS	6	6	3	7	11	0	5	5
YOU WORK WITH.								
D 257 D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS	8	8	6	9	14	3	5	5
YOU WORK WITH.								
D 258 D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS	5	5	3	5	11	0	5	5
YOU WORK WITH.								
D 259 D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.	10	11	6	13	14	0	0	0
D 260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC	4	4	0	2	11	3	0	0
E 261 E1-D1 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.	9	11	3	14	11	3	0	0
E 262 E1-U2 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	7	8	0	9	11	3	0	0
E 263 E1-U3 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	7	8	0	9	11	3	0	0
E 264 E1-U4 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	8	9	3	11	11	3	0	0
E 265 E1-U5 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.	6	8	0	9	11	3	0	0
E 266 E1-U6 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.	6	7	0	9	11	0	0	0
E 267 E1-U7 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.	7	8	3	9	11	3	0	0
E 268 E1-U8 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.	6	7	3	7	11	3	0	0
E 269 E1-U9 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.	6	7	0	7	11	3	0	0
E 270 E1-U10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.	5	6	0	7	11	0	0	0
E 271 E1-U11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.	6	6	3	5	11	3	0	0
E 272 E1-U12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.	5	6	0	7	11	0	0	0

PCT MARS RESPONDING YFS TO ITEMS- SELECTED GPS
TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UPSUM7 PAGE 12

DY-TSK

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
E 273	E2-U1 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.	89	91	92	84	89	89	95
E 274	E2-U2 DO YOU SELECT TYPE OF SOLDER TO USE.	85	85	89	80	89	86	86
E 275	E2-U3 DO YOU ADD FLUX TO CONNECTIONS.	87	88	89	88	89	81	95
E 276	E2-U4 DO YOU CLEAN CONNECTIONS USING SOLVENTS.	73	75	72	59	78	81	76
E 277	E2-U5 DO YOU STRIP INSULATION FROM WIRES.	91	92	94	88	92	89	95
E 278	E2-U6 DO YOU CONNECT OR DISCONNECT HEAT SINKS.	80	82	78	80	84	78	71
E 279	E2-U7 DO YOU BEND OR SHAPE WIRES OR LEADS.	90	91	92	89	89	86	90
E 280	E2-U8 DO YOU CUT WIRES.	91	92	94	89	92	69	95
E 281	E2-U9 DO YOU FILE OR SHAPE SOLDERING IRON TIPS.	86	87	92	82	69	63	95
E 282	E2-U10 DO YOU TIN SOLDERING IRON TIPS.	68	68	92	84	84	89	95
E 283	E2-U11 DO YOU CLEAN SOLDERING IRON TIPS.	90	91	92	86	89	89	95
E 284	E2-U12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.	51	52	53	39	73	42	43
E 285	E2-U13 DO YOU TIN OR PRE-TIN CONDUCTORS.	70	72	69	66	78	53	71
E 286	E2-U14 DO YOU INSPECT SOLDERED CONNECTIONS.	91	92	92	88	89	92	95
E 287	E2-U15 DO YOU DESOLDER CONNECTIONS BY WICKING.	51	55	39	43	59	47	38
E 288	E2-U16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESCODLING TOOLS.	33	32	36	23	38	31	33
E 289	E2-U17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.	69	68	78	61	76	53	81
E 290	E2-U18 DO YOU CRUSH COMPONENTS FOR REMOVAL.	16	15	11	14	22	8	10
E 291	E2-U19 DO YOU MAKE HARDWIRE CONNECTIONS.	75	78	78	71	76	72	76
E 292	E2-U20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS.	69	72	64	68	73	56	62
E 293	E2-U21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	64	65	58	66	70	50	52
E 294	E2-U22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	61	62	58	61	59	50	57
E 295	E3-U1 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	73	69	78	80	57	58	81
E 296	E3-U2 DO YOU ADJUST RELAYS	54	53	56	54	54	33	52
E 297	E3-U3 DO YOU CLEAN RELAYS	71	69	72	75	62	58	76
E 298	E3-U4 DO YOU INSPECT RELAYS	75	72	75	79	65	61	81
E 299	E3-U5 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	73	69	61	80	62	53	86
E 300	E3-U6 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	40	39	33	46	46	17	33
E 301	E3-U7 DO YOU TROUBLESHOOT RELAYS	69	68	67	73	62	56	67
E 302	E3-U8 DO YOU STRAIGHTEN RELAY CONTACTS	66	64	69	70	62	47	76
E 303	E3-U9 DO YOU PERFORM TASKS ON RELAY CONTACTS	69	66	72	75	59	50	81
E 304	E3-U10 DO YOU PERFORM TASKS ON RELAY CORES	21	18	22	11	38	8	24
E 305	E3-U11 DO YOU PERFORM TASKS ON RELAY COILS	27	25	31	13	46	8	33
E 306	E3-U12 DO YOU PERFORM TASKS ON RELAY ARMATURES	31	30	31	27	49	14	43
E 307	E3-U13 DO YOU PERFORM TASKS ON RELAY SPRINGS	54	52	53	57	51	31	62
E 308	E3-U14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPER (NO) SCHEMATIC SYMBOLS FOR RELAYS	58	55	64	66	49	33	62
E 309	E3-U15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	57	55	64	64	49	33	62
E 310	E3-U16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	55	53	58	63	46	31	57
E 311	E3-U17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	55	54	58	63	46	28	57

PCT MARS RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 13

DATA-TASK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
E 312 F1-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC	46	47	47	52	41	25	48
E 313 F1-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY	51	48	56	52	49	42	52
F 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES	4	5	0	0	8	0	0
F 315 F1-02 DO YOU INSPECT MICROPHONES	4	5	0	0	8	0	0
F 316 F1-03 DO YOU CLEAN MICROPHONES	4	5	0	0	8	0	0
F 317 F1-04 DO YOU OPERATE MICROPHONES	4	5	0	0	8	0	0
F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	4	5	0	0	5	0	0
F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS	2	2	0	0	5	0	0
F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES	3	4	0	0	5	0	0
F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS	2	2	0	0	5	0	0
F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES	2	2	0	0	5	0	0
F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES	2	2	0	0	5	0	0
F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES	2	2	0	0	5	0	0
F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES	3	3	0	0	5	0	0
F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES	1	1	0	0	5	0	0
F 327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS	29	32	11	16	51	25	5
F 328 F2-02 DO YOU INSPECT SPEAKERS	30	32	14	16	54	25	5
F 329 F2-03 DO YOU CLEAN SPEAKERS	27	29	14	16	46	22	5
F 330 F2-04 DO YOU OPERATE SPEAKERS	28	31	14	14	54	22	5
F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT	29	32	14	16	54	25	5
F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS	13	15	0	2	35	11	0
F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS	25	27	14	11	54	17	5
F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS	9	10	0	2	24	3	0
F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES	7	8	0	0	16	14	0
F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS	2	2	0	0	8	0	0
F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS	3	3	0	0	8	3	0
F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS	3	2	0	0	8	0	0
F 339 F2-13 DU YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS	4	4	0	0	14	3	0
F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS	3	3	0	0	14	0	0
F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES	3	2	0	0	11	0	0
F 342 F3-01 DU YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB	28	29	32	14	22	14	14
F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS	24	25	25	29	11	14	14
F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS	20	20	22	21	14	11	14
F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS	25	26	25	27	11	19	14
* F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY	19	22	11	27	11	14	10
* F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME	13	14	8	13	14	14	5

PCT MARKS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 14

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
DY-TSK								
F 348	F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	10	11	8	11	8	11	5
F 349	F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	15	15	17	13	11	17	5
F 350	F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	9	10	6	9	8	6	5
F 351	F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	24	26	22	30	11	17	10
F 352	F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	14	15	14	14	11	14	10
F 353	F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	23	24	22	29	8	14	14
G 354	G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	45	43	47	46	32	39	43
G 355	G1-02 DO YOU INSPECT DIODES	43	42	42	43	32	33	38
G 356	G1-03 DO YOU REMOVE OR REPLACE DIODES	44	42	44	46	30	36	43
G 357	G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	40	39	39	39	30	36	29
G 358	G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	4	2	6	4	8	0	0
G 359	G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE,	10	9	6	5	22	6	0
G 360	G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	14	15	6	18	19	6	5
G 361	G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	31	31	25	32	27	22	24
G 362	G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON	37	38	33	41	30	28	24
G 363	G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	8	7	0	9	11	8	0
G 364	G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	24	23	17	36	16	8	5
G 365	G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	24	24	28	25	19	14	19
G 366	G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	4	4	0	2	14	0	0
G 367	G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	4	3	0	0	14	0	0
G 368	G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 536	25	22	31	21	22	17	24
G 369	G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	4	4	0	2	14	0	0
G 370	G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	4	5	0	4	14	0	0
G 371	G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	18	18	11	23	19	8	10
G 372	G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	5	5	0	4	14	0	0
G 373	G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITTING ELECTRON	4	4	0	2	14	0	0

PCT MARS RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 15

	Q1-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
G 374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	4	5	0	4	14	0	0	0
G 375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	5	5	0	4	14	0	0	0
G 376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	6	5	3	4	14	0	5	
G 377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	33	31	36	34	24	25	24	
G 378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	13	14	6	7	19	8	5	
G 379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE	16	17	11	16	16	8	10	
G 380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	8	8	3	11	14	0	5	
G 381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR	15	15	14	16	16	8	14	
G 382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	6	5	3	4	16	0	5	
G 383 G1-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	6	5	3	2	16	0	5	
G 384 G1-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	6	5	0	4	16	0	0	
G 385 G1-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	6	5	3	4	16	0	5	
G 386 G1-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	5	5	0	4	16	0	0	
G 387 G1-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	7	6	3	5	16	0	0	
G 388 G1-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	6	5	0	4	16	0	0	
G 389 G1-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	7	6	3	4	19	0	5	
G 390 G1-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	16	15	19	16	22	3	24	
G 391 G1-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	15	14	17	16	19	3	19	
G 392 G1-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	6	5	0	4	16	0	0	
G 393 G1-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	6	5	0	4	16	0	0	
G 394 G1-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	5	5	0	4	16	0	0	
G 395 G1-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	6	5	0	4	16	0	0	
G 396 G1-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN HARRIER WIDTH AND DIFFERENCE OF POTENTIAL	6	0	0	5	16	0	0	

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

ITEMS	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
G 397 G1-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	12	13	3	18	14	8	0
G 398 G1-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	4	4	0	4	14	0	0
G 399 G1-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	18	18	14	16	19	14	10
G 400 G1-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	11	13	3	13	16	8	0
G 401 G1-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	9	11	3	9	16	6	0
G 402 G1-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	10	12	3	13	16	6	0
G 403 G1-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	10	11	6	9	16	8	0
G 404 G2-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	50	49	42	52	46	36	29
G 405 G2-02 DO YOU INSPECT TRANSISTORS	48	48	39	50	46	33	29
G 406 G2-03 DO YOU REMOVE OR REPLACE TRANSISTORS	47	48	36	50	43	36	29
G 407 G2-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	45	47	33	48	43	36	24
G 408 G2-05 DO YOU USE OR REFER TO Emitter - Base (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	39	39	33	39	35	31	29
G 409 G2-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	34	33	31	32	35	22	24
G 410 G2-07 DO YOU USE OR REFER TO Emitter - Collector (EC)	34	33	31	34	35	19	24
G 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE Emitter - BASE JUNCTION	14	15	6	13	24	8	10
G 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	14	15	3	11	27	8	5
G 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND Emitter)	28	29	17	25	30	25	10
G 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	17	16	11	14	24	8	10
G 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS	44	44	39	43	38	33	29
G 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC	45	44	42	45	38	33	33
G 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	28	28	22	20	27	17	14
G 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY	17	19	3	16	22	14	5
G 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF Emitter BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR	18	18	14	13	24	11	19
G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT INCREASES AS TEMPERATURE INCREASES	15	16	6	13	22	8	5
G 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	4	3	6	5	22	3	5

PCT MEMBERS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 17

	D Y-TSK											
	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	6	5	3	4	19	0	5					
G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	6	5	3	4	19	0	5					
G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	6	5	3	4	19	0	5					
G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	6	5	3	4	19	0	5					
G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	4	2	3	0	16	0	5					
G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	4	2	3	0	16	0	5					
G 428 G3-U1 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	18	18	14	14	22	11	5					
G 429 G3-U2 DO YOU INSPECT TRANSISTOR AMPLIFIERS	18	20	6	18	22	11	0	TRANSISTOR AMPLIFIERS				
G 430 G3-U3 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	10	11	3	13	14	3	0					
G 431 G3-U4 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	15	17	6	20	22	6	0					
G 432 G3-U5 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	16	18	6	18	22	6	0					
G 433 G3-U6 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	17	18	8	16	22	8	0					
G 434 G3-U7 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	16	17	8	16	22	8	0					
G 435 G3-U8 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE	7	6	3	4	14	3	0					
G 436 G3-U9 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN G-37 G3-U10 DO YOU USE OR REFER TO (COMMON Emitter) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	4	4	0	2	16	0	0					
G 438 G3-U11 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN G-39 G3-U12 DO YOU USE OR REFER TO (COMMON Emitter) THE BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	6	5	3	4	16	0	0					
G 440 G3-U13 DO YOU USE OR REFER TO (COMMON Emitter) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN G-41 G3-U14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A Q-POINT) FOR A TRANSISTOR	4	4	0	4	14	0	0					
G 442 G3-U15 DO YOU USE OR REFER TO THE OPERATING POINT Q-POINT) FOR A TRANSISTOR	7	7	0	4	16	3	0					
G 443 G3-U16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	4	3	0	0	16	0	0					
G 444 G3-U17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON Emitter Configuration	10	11	3	13	16	3	0					
G 445 G3-U18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON Emitter Configuration	8	8	3	7	16	3	0					
G 446 G3-U19 DO YOU MEASURE POWER GAIN USED IN THE COMMON Emitter Configuration	9	10	3	9	16	3	0					
G 447 G3-U20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE	4	4	0	0	16	3	0					

PCT MARS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 18

DY-TSK

	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
G 448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE	4	3	0	0	16	0	0
G 449 G3-22 DO YOU COMPUTE THE STATIC OPERATING POINT (EQJ OF A TRANSISTOR AT DIFFERENT TEMPERATURES	4	5	0	0	14	3	0
G 450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS	4	5	0	0	14	3	0
G 451 G3-24 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	3	2	0	0	14	0	0
G 452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	6	5	0	2	16	3	0
G 453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO	5	5	0	0	16	3	0
G 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	7	6	6	2	16	3	0
G 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	6	5	3	2	16	3	0
G 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	6	5	3	2	16	3	0
G 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	7	6	3	4	16	3	0
G 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM Emitter (Shunting) RESISTOR STABILIZATION	6	6	0	4	16	0	0
G 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	6	5	0	2	16	0	0
G 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	8	6	3	5	16	0	0
G 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	7	7	0	5	16	0	0
G 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	7	7	0	5	16	0	0
G 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	6	6	0	4	16	0	0
G 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	5	5	0	4	11	3	0
G 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	7	8	0	5	14	3	0

PCT HARS RESPONDING YES TO ITEMS* SELECTED QPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 19

	DYNAMIC		SPC									
	U03	U07	U08	U09	U10	U11	U12	U13	U14	U15	U16	U17
G 466 G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	6	6	0	5	11	0	0	0	0	0	0	0
G 467 G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	4	5	0	5	11	0	0	0	0	0	0	0
G 468 G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	4	5	0	4	14	0	0	0	0	0	0	0
G 469 G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	5	5	0	4	11	0	0	0	0	0	0	0
G 470 G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING Emitter RESISTANCE FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	4	5	0	5	11	0	0	0	0	0	0	0
G 471 G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR G 472 G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS G 473 G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	7	8	0	9	14	3	0	0	0	0	0	0
G 474 G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	2	2	0	2	6	0	0	0	0	0	0	0
G 475 G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	4	5	0	5	8	3	0	0	0	0	0	0
G 476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	3	3	0	4	8	0	0	0	0	0	0	0
H 477 H1-01 DO YOU USE OR REFER TO VARACTORS	7	7	3	4	14	4	5	5	5	5	5	5
H 478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	7	8	0	7	14	4	4	4	4	4	4	4
H 479 H1-03 DO YOU USE OR REFER TO FIELD-EFFECT TRANSISTORS (FET)	19	20	17	21	16	14	24	0	0	0	0	0
H 480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	14	15	11	16	14	11	14	14	14	14	14	14
H 481 H1-05 DO YOU USE OR REFER TO ZENER DIODES	46	49	42	48	38	39	43	43	43	43	43	43
H 482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	45	49	39	43	46	36	43	43	43	43	43	43
H 483 H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	50	48	50	52	49	28	48	48	48	48	48	48
H 484 H2-02 DO YOU INSPECT POWER SUPPLIES	46	44	50	50	35	26	48	48	48	48	48	48
H 485 H2-03 DO YOU CLEAN POWER SUPPLIES	43	42	42	52	30	25	36	36	36	36	36	36
H 486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	32	29	38	24	8	33	33	33	33	33	33	33
H 487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	38	37	36	43	32	19	29	29	29	29	29	29
H 488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	35	35	31	38	30	22	24	24	24	24	24	24
H 489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	36	35	39	39	30	17	38	38	38	38	38	38
H 490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	34	33	31	38	30	17	29	29	29	29	29	29
H 491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	25	23	21	25	19	11	24	24	24	24	24	24
H 492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	25	24	28	25	19	11	19	19	19	19	19	19
H 493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	32	31	36	30	22	19	29	29	29	29	29	29
H 494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	13	12	8	13	19	3	5	5	5	5	5	5
H 495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	37	38	33	39	38	19	24	24	24	24	24	24
H 496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	19	18	19	23	19	11	14	14	14	14	14	14
H 497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	23	22	21	24	21	14	14	14	14	14	14	14
H 498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	22	22	23	24	21	11	14	14	14	14	14	14
H 499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	7	6	4	14	6	10	10	10	10	10	10	10
H 500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	6	5	3	4	16	3	3	3	3	3	3	3

PCT MARS RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 20

		DY-TSK	SPC U03	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
H 501	H2-19	DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	12	12	8	7	22	14	10
H 502	H2-20	DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	14	12	22	13	16	6	14
H 503	H2-21	DC YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	22	20	25	21	22	11	14
H 504	H2-22	DC YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	19	15	31	18	19	8	24
H 505	H2-23	DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	13	11	19	13	19	6	14
H 506	H2-24	DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	11	10	11	13	16	3	5
H 507	H2-25	DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	10	8	11	11	16	3	5
H 508	H2-26	DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	6	5	3	5	16	3	0
H 509	H2-27	DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	7	5	4	5	16	3	5
H 510	H2-28	DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	21	22	11	29	19	11	14
H 511	H2-29	DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	5	4	3	4	14	0	0
H 512	H3-01	DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	8	6	11	7	8	3	5
H 513	H3-02	DO YOU INSPECT OSCILLATORS	7	5	8	5	8	4	5
H 514	H3-03	DO YOU ALIGN OR ADJUST OSCILLATORS	4	4	6	4	6	0	5
H 515	H3-04	DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	5	5	6	5	8	3	0
H 516	H3-05	DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	4	4	4	4	6	3	0
H 517	H3-06	DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	4	4	4	4	8	3	0
H 518	H3-07	DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	4	4	4	4	8	3	0
H 519	H3-08	DO YOU USE OR REFER TO FEEDBACK DETERMINING DEVICES	4	4	4	4	8	0	5
H 520	H3-09	DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDDC)	2	2	0	2	8	0	0
H 521	H3-10	DO YOU USE OR REFER TO AMPLITUDE STABILITY	3	3	3	2	8	0	5
H 522	H3-11	DO YOU USE OR REFER TO FREQUENCY STABILITY	2	2	0	0	8	0	0
H 523	H3-12	DO YOU USE OR REFER TO DAMPING	3	3	0	4	8	0	0
H 524	H3-13	DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	3	3	0	4	8	0	0
H 525	H3-14	DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	2	2	0	0	8	0	0
H 526	H3-15	DO YOU USE OR REFER TO CRITICAL DAMPING	2	2	0	0	8	0	0
H 527	H3-16	DO YOU USE OR REFER TO UNDER DAMPING	2	2	0	2	8	0	0
H 528	H3-17	DO YOU USE OR REFER TO OVER DAMPING	2	2	0	2	8	0	0
H 529	H3-18	DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FUNDAMENTAL	3	2	6	2	8	0	5
H 530	H3-19	DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FUNDAMENTAL	4	2	6	2	8	0	5
H 531	H3-20	DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FUNDAMENTAL	3	2	3	0	8	0	0
H 532	H3-21	DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	4	5	3	4	8	3	0
H 533	H3-22	DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	2	2	0	0	8	0	0

TASK GROUP SUMMARY PERCENT MEMBERS PRACTICING

CONTENTS

	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
H 534 H3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	2	2	0	0	0	0	0
H 535 H3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	2	2	0	0	0	0	0
H 536 H3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	2	2	0	0	0	0	0
H 537 H3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	2	2	0	0	0	0	0
H 538 H3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF OSCILLATORS	4	4	3	4	5	3	0
I 539 11-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	11	12	6	16	8	6	5
I 540 11-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	6	5	6	9	8	0	5
I 541 11-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING CIRCUITS	5	5	6	7	8	0	5
I 542 11-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	4	4	3	5	6	0	0
I 543 11-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	6	5	6	9	8	0	0
I 544 11-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING CIRCUITS	5	4	8	5	8	0	5
I 545 11-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR SHAPING CIRCUITS	3	3	4	8	0	0	0
I 546 11-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING CIRCUITS	3	2	3	0	8	0	0
I 547 11-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK CIRCUITS	2	2	3	0	8	0	5
I 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC NETWORKS	2	2	3	0	8	0	5
I 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN CRYSTALS	2	2	0	0	8	0	0
I 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T REMEMBER WHICH TYPE OF FDU	6	7	3	7	8	6	0
I 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	7	8	6	11	8	3	5
I 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	8	9	6	14	8	3	5
I 553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	8	9	6	14	8	3	5
I 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE MULTIVIBRATORS	4	5	0	4	8	6	0
I 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR PRESENT JOB	6	5	8	7	8	0	5
I 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS	5	5	6	5	8	0	5
I 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	3	4	0	4	8	0	5
I 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS	2	2	0	0	8	0	0
I 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS	4	4	3	4	8	0	0
I 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS	4	5	3	5	8	0	0
I 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	4	4	3	5	8	0	0
I 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	2	2	0	2	8	0	0
I 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	2	2	3	0	8	0	5
I 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING CIRCUITS	5	5	3	7	8	0	0
I 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH CONTAINS ELECTRON TUBES	51	55	42	46	57	44	33
I 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	49	54	36	43	57	47	29

PCT MARKS RESPONDING YES TO ITEMS* SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 22

	D-Y-TSK													
	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
1 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	41	46	31	39	43	36	24	31	31	19	31	19	31	19
1 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	31	34	22	34	24	24	31	31	31	19	31	19	31	19
1 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	8	8	6	9	11	6	0	0	0	0	0	0	0	0
1 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	35	33	36	29	35	33	33	33	33	33	33	33	33	33
1 571 13-07 DO YOU USE OR REFER TO CUTOFF	12	13	13	13	13	13	14	14	14	14	14	14	14	14
1 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	7	8	0	13	13	13	11	11	11	11	11	11	11	11
1 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	12	13	13	13	13	13	14	14	14	14	14	14	14	14
1 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME	6	6	0	7	7	7	11	11	11	11	11	11	11	11
1 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	8	9	3	5	5	5	6	6	6	6	6	6	6	6
1 576 13-12 DO YOU USE OR REFER TO SATURATION	14	17	3	21	21	21	8	8	8	8	8	8	8	8
1 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	10	12	3	11	11	11	6	6	6	6	6	6	6	6
1 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	3	3	0	5	8	0	0	0	0	0	0	0	0	0
1 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	24	25	14	27	19	17	14	17	17	14	17	14	17	14
1 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT	19	20	8	20	16	16	11	11	11	10	11	10	11	10
1 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE	24	24	17	25	19	19	14	14	14	14	14	14	14	14
1 582 13-18 DO YOU USE OR REFER TO GRID CURRENT	19	19	11	20	16	16	8	8	8	8	8	8	8	8
1 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	24	24	17	25	19	19	14	14	14	14	14	14	14	14
1 584 13-20 DC YOU USE OR REFER TO CATHODE CURRENT	19	20	11	23	16	16	8	8	8	8	8	8	8	8
1 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	5	5	0	4	4	4	0	0	0	0	0	0	0	0
1 586 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	3	3	0	0	0	0	0	0	0	0	0	0	0	0
1 587 13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	7	7	3	4	4	4	6	6	6	6	6	6	6	6
1 588 13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	3	2	0	0	0	0	0	0	0	0	0	0	0	0
1 589 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	3	2	0	0	0	0	0	0	0	0	0	0	0	0
1 590 13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	3	2	3	0	1	1	0	0	0	0	0	0	0	0
1 591 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	3	3	0	2	1	1	0	0	0	0	0	0	0	0
1 592 13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	3	3	0	0	1	1	0	0	0	0	0	0	0	0
1 593 13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	4	4	0	2	1	1	0	0	0	0	0	0	0	0
1 594 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	3	2	3	4	6	6	5	5	5	5	5	5	5	5
1 595 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	3	2	3	4	8	8	0	0	0	0	0	0	0	0
1 596 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	4	4	4	4	4	4	11	11	11	10	11	10	11	10
1 597 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	5	4	3	4	4	4	11	11	11	10	11	10	11	10

PCT MORS RESPONDING YES TO ITEMS- SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUMT PAGE 23

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
1 598	13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	11	13	3	14	8	14	5
1 599	13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	8	9	3	9	8	8	5
1 600	13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	19	22	11	23	11	14	19
1 601	13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	14	15	11	18	11	8	14
1 602	13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	7	8	6	9	5	6	5
1 603	13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	2	2	0	2	5	0	0
1 604	13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	4	3	3	2	8	0	5
1 605	13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	24	25	14	21	22	19	10
1 606	13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	31	32	25	24	31	24	5
1 607	13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE	4	5	3	4	5	0	5
1 608	13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	23	22	31	20	16	11	19
J 609	J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	19	18	17	16	27	11	10
J 610	J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	7	8	6	4	8	6	5
J 611	J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	7	2	3	0	5	0	5
J 612	J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	6	9	3	7	14	6	5
J 613	J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	2	2	0	4	3	0	0
J 614	J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	2	2	0	2	3	3	0
J 615	J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	11	12	11	7	24	0	5
J 616	J2-01 DO YOU WORK WITH GAS TUBES THAT CATHODE OR COLD CATHODE	23	23	19	27	14	22	24
J 617	J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	30	29	33	39	16	14	29
J 618	J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	4	3	3	2	5	3	5
J 619	J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	6	5	3	7	5	3	5
J 620	J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	4	5	0	4	5	3	0
J 621	J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	4	5	0	5	5	0	0
J 622	J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	13	12	14	14	5	3	14
J 623	J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	13	15	3	20	5	6	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	11	13	3	16	5	6	0	0
J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS	18	18	19	27	5	6	19	5
J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS	5	5	3	5	3	3	0	0
J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS	7	5	6	4	5	6	14	14
J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE	4	3	3	0	6	3	5	5
J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES	6	5	6	4	6	3	10	3
J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE	10	6	11	7	6	3	14	3
J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE	10	9	11	11	8	6	14	14
J 632 J3-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	2	1	0	2	5	0	0	0
J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	1	0	0	0	3	0	0	0
J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS	1	0	0	0	3	0	0	0
J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING, MODULATION, AND DEMODULATION	1	0	0	0	3	0	0	0
J 636 J3-05 DO YOU WORK WITH TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0	0
J 637 J3-06 DO YOU PERFORM TASKS ON REACTANCE MODULATORS	1	0	0	0	3	0	0	0
K 638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	1	0	0	3	0	0	0	0
K 639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	3	0	0	0	0
K 640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	3	0	0	0	0
K 641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	3	0	0	0	0
K 642 K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	3	0	0	0	0
K 643 K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	1	0	0	3	0	0	0	0
K 644 K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	3	0	0	0	0
K 645 K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	3	0	0	0	0
K 646 K1-09 DO YOU PERFORM TASKS ON RF OSCILLATORS	1	0	0	3	0	0	0	0
K 647 K1-10 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	0	0	3	0	0	0	0
K 648 K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	0	0	0	3	0	0	0	0
K 649 K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	0	0	0	3	0	0	0	0
K 650 K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	0	0	0	3	0	0	0	0
K 651 K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS	0	0	0	3	0	0	0	0
K 652 K1-15 DO YOU PERFORM TASKS ON DETECTORS	0	0	0	3	0	0	0	0
K 653 K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE	0	0	0	3	0	0	0	0
K 654 K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	0	0	0	3	0	0	0	0
K 655 K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	1	0	0	3	0	0	0	0
K 656 K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	1	0	0	3	0	0	0	0
K 657 K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	1	0	0	3	0	0	0	0
K 658 K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTURBATION	0	0	0	3	0	0	0	0
K 659 K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION	0	0	0	3	0	0	0	0
K 660 K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION	0	0	0	3	0	0	0	0

PCT MEMBERS RESPONDING YES TO ITEMS* SELECTED GPS

GPSUM7 PAGE 25

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK									
	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012			
K 661 K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	1	0	0	0	3	0	0			
K 662 K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	1	0	0	0	3	0	0			
K 663 K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	1	0	0	0	3	0	0			
K 664 K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	1	0	0	0	3	0	0			
K 665 K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	1	0	0	0	3	0	0			
K 666 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	1	1	0	2	3	0	0			
K 667 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0			
K 668 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0			
K 669 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0			
K 670 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0			
K 671 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	1	0	0	0	3	0	0			
K 672 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0			
K 673 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	1	0	0	0	3	0	0			
K 674 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	1	0	0	0	3	0	0			
K 675 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	1	0	0	0	3	0	0			
K 676 K2-11 DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	1	0	2	3	0	0				
K 677 K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS	1	0	0	0	3	0	0			
K 678 K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS	1	0	0	0	3	0	0			
K 679 K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	1	0	0	0	3	0	0			
K 680 K2-15 DO YOU PERFORM TASKS ON LIMITERS IF AMPLIFIERS	1	0	0	0	3	0	0			
K 681 K2-16 DO YOU PERFORM TASKS ON LIMITERS	1	0	0	0	3	0	0			
K 682 K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	1	0	0	0	3	0	0			
K 683 K2-18 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	1	0	0	0	3	0	0			
K 684 K2-19 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	1	0	0	0	3	0	0			
K 685 K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	3	2	3	2	3	0	5			
K 686 K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2)	5	5	6	5	11	0	10			
K 687 K3-U3 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	4	3	5	8	0	5				
K 688 K3-U4 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	3	3	0	4	8	0				
K 689 K3-U5 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	4	1	3	4	11	0	5			
K 690 K3-U6 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	3	0	4	6	0	0				
K 691 K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM	6	5	3	5	14	0	5			
K 692 K3-U8 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	3	4	0	2	11	0				
K 693 K3-U9 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	4	5	0	4	11	0				

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
K 694 K3-15 DO YOU ADD OCTAL NUMBERS TO GET A SUM		5	4	4	5	8	8	5
L 695 L7-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS		4	3	8	2	6	6	10
L 696 L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS		2	2	0	2	6	0	0
L 697 L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS		3	3	0	4	6	0	0
L 698 L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS		2	2	0	2	8	6	0
L 699 L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES		2	2	0	2	6	0	0
L 700 L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES		3	3	2	8	6	0	0
L 701 K1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES		3	3	2	8	6	0	0
L 702 K1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS		3	3	2	8	6	0	0
L 703 L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS		3	3	2	8	6	0	0
L 704 L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES		4	3	6	2	8	6	3
L 705 L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES		4	3	6	2	8	6	5
L 706 L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES		4	3	6	2	8	6	5
L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES		4	3	6	2	8	6	5
L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC TRANISITOR LOGIC (DTCL) CIRCUITS		2	2	3	2	0	0	5
L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED		1	0	0	0	3	0	0
L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS		1	0	0	0	3	0	0
L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS		1	0	0	0	3	0	0
L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES		2	1	3	0	3	0	5
L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF THROUABLES-OUTING DIGITAL CIRCUITS		1	0	0	0	3	0	0
L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA		1	0	0	0	3	0	0
L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DTCL) CIRCUIT GATES		1	1	0	0	3	0	0
L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS		1	0	0	0	3	0	0
L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE		1	0	0	0	3	0	0
L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS		1	0	0	0	3	0	0

PCT MARS RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 27

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER	1	0	0	0	3	0	0	0
L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING)	2	1	3	0	3	0	0	5
L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS	2	2	3	0	3	0	0	5
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT)	2	2	0	0	3	0	0	0
L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR	2	2	0	0	3	0	0	0
L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR	1	1	0	0	3	0	0	0
LOGIC SYMBOLS								
L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS	1	1	0	0	3	0	0	0
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES	1	1	0	0	3	0	0	0
L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP	1	1	0	0	3	0	0	0
LOGIC SYMBOLS								
L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC	1	1	0	0	3	0	0	0
LOGIC SYMBOLS								
L 729 L2-22 DO YOU MEASURE OUTPUT WAVE SHAPES OF LOGIC CIRCUITS	2	1	3	0	3	0	0	5
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP	1	1	0	0	3	0	0	0
SCHEMATIC DIAGRAMS								
L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS	1	1	0	0	3	0	0	0
L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP	1	0	0	0	3	0	0	0
LOGIC SYMBOLS								
L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB	6	5	6	4	6	3	5	5
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS	5	5	3	5	8	3	5	5
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS	4	5	3	5	8	0	5	5
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS	4	3	6	4	6	0	5	5
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS	3	2	4	2	6	0	5	5
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS	2	2	3	0	6	0	5	5
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS	3	2	3	0	6	0	5	5
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS	3	2	4	0	6	0	5	5
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS	3	3	3	4	6	0	5	5
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS	4	5	3	4	6	3	5	5
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	2	1	3	0	5	0	5	5
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-FLOPS	2	1	3	0	5	0	5	5
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF DECADE COUNTERS	2	2	3	0	5	0	5	5
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF RING COUNTERS	2	1	3	0	5	0	5	5
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER SHIFT REGISTERS	2	1	3	0	5	0	5	5
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	2	1	3	0	5	0	5	5

PCT MBR'S RESPONDING YES TO ITEMS- SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 28

DY-TSK

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
L 749	L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	3	2	6	2	5	0	5
L 750	L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	2	1	3	0	5	0	5
L 751	L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	2	1	3	0	5	0	5
L 752	L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	2	1	3	0	5	0	5
L 753	L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	2	1	3	0	5	0	5
L 754	L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	2	1	3	0	5	0	5
L 755	L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	2	1	3	0	5	0	5
L 756	L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	2	1	3	0	5	0	5
M 757	M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	8	6	14	7	11	0	10
M 758	M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	4	3	3	2	11	0	0
M 759	M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	4	8	2	11	0	5	5
M 760	M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	6	3	11	2	11	0	10
M 761	M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS	6	4	11	4	11	0	10
M 762	M1-06 DO YOU USE OR REFER TO RISE TIME	7	5	8	4	11	0	10
M 763	M1-07 DO YOU USE OR REFER TO FALL OR FLYBACK TIME	7	6	6	5	11	0	5
M 764	M1-08 DO YOU USE OR REFER TO SLEEP TIME	11	8	19	7	11	0	19
M 765	M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	9	8	11	7	11	0	5
M 766	M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	7	6	6	5	11	0	5
M 767	M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	7	6	6	5	11	0	5
M 768	M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	5	5	0	4	11	0	0
M 769	M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	4	4	0	5	8	0	0
M 770	M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	3	3	0	4	8	0	0
M 771	M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL GENERATORS	2	1	0	0	8	0	0
M 772	M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	2	1	0	0	8	0	0
M 773	M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	1	0	0	0	5	0	0
M 774	M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS	2	1	0	0	5	0	0

**Task Group Summary
Percent Members Participating**

ITEM	DESCRIPTION	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
M 775 M-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE PULSE, OR SPIKE	1	0	0	0	5	0	0	0
M 776 M-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MHZ	1	0	0	0	5	0	0	0
M 777 M-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MHZ	1	0	0	0	5	0	0	0
M 778 M-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS	3	2	0	0	5	0	0	0
M 779 M-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR	7	78	69	79	78	72	62	62
M 780 M-02 DO YOU INSPECT MOTORS	77	76	72	73	81	72	67	67
M 781 M-03 DO YOU CLEAN OR LUBRICATE MOTORS	76	76	72	75	81	72	67	67
M 782 M-04 DO YOU OPERATE MOTORS	74	75	69	73	81	67	62	62
M 783 M-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS	74	74	69	75	78	67	67	67
M 784 M-06 DO YOU REMOVE OR REPLACE MOTOR PARTS	62	65	47	55	73	61	48	48
M 785 M-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS	76	76	69	75	81	72	62	62
M 786 M-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS	57	58	44	54	68	50	52	52
M 787 M-09 DO YOU PERFORM ANY TASKS ON FIELD COILS	24	28	14	25	41	22	10	10
M 788 M-10 DO YOU PERFORM ANY TASKS ON ARMATURES	37	38	33	34	49	25	38	38
M 789 M-11 DO YOU PERFORM ANY TASKS ON ROTORS	34	42	25	39	49	28	19	19
M 790 M-12 DO YOU PERFORM ANY TASKS ON BRUSHES	59	60	20	54	62	53	48	48
M 791 M-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS	29	30	22	25	32	31	24	24
M 792 M-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS	30	33	19	21	46	33	19	19
M 793 M-15 DO YOU PERFORM ANY TASKS ON POLE PIECES	23	25	17	18	30	25	14	14
M 794 M-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR	13	11	13	19	6	10	6	6
M 795 M-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR	19	19	11	21	24	6	14	14
M 796 M-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS	12	11	11	11	19	0	19	19
M 797 M-19 DO YOU WORK WITH SYNCHRONOUS MOTORS	27	29	17	14	49	22	14	14
M 798 M-20 DO YOU WORK WITH INDUCTION MOTORS	35	37	31	27	41	31	33	33
M 799 M-21 DO YOU WORK WITH SPLIT-PHASE MOTORS	32	33	25	32	38	19	19	19
M 800 M-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS	50	49	53	50	51	42	48	48
M 801 M-23 DO YOU INSPECT GENERATORS	18	17	19	20	16	17	19	19
M 802 M-24 DO YOU CLEAN OR LUBRICATE GENERATORS	18	17	19	18	18	17	19	19
M 803 M-25 DO YOU OPERATE GENERATORS	25	23	33	34	16	14	38	38
M 804 M-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS	12	13	8	11	16	17	5	5
M 805 M-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS	12	12	8	11	16	14	5	5
M 806 M-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS	17	17	17	20	16	17	14	14
M 807 M-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS	13	13	11	13	16	11	10	10
N 808 NI-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB	67	65	72	70	54	58	76	76
N 809 NI-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS	14	14	14	11	19	8	14	14
N 810 NI-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS	13	12	11	9	10	6	19	19

TASK GROUP SUMMARY

*51-2

	SPC														
	003	007	008	009	010	011	012	013	014	015	016	017	018	019	020
N 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS															
N 812 N1-05 DO YOU READ METER SCALES	69	67	69	71	59	58	71	58	59	58	59	58	58	59	58
N 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	18	15	19	14	24	6	24	6	15	19	14	24	6	24	6
N 814 N1-07 DO YOU ZERO OHMMETERS	70	68	72	73	59	58	76	58	70	68	72	73	59	58	76
N 815 N1-08 DO YOU ZERO AMMETERS	35	35	31	30	32	31	33	31	35	35	31	30	32	31	33
N 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	25	19	36	21	24	14	43	24	19	36	21	24	14	43	24
N 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	35	33	31	38	22	22	33	22	35	33	31	38	22	22	33
N 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 825 N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 826 N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 827 N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE	1	1	0	0	5	0	0	5	0	0	5	0	0	5	0
N 828 N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0
N 829 N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0
N 830 N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0
N 831 N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0
N 832 N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0
N 833 N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0
N 834 N3-01 DO YOU WORK WITH WAVEHAVING CIRCUITS IN YOUR PRESENT JOB	4	3	7	3	3	0	0	3	7	3	3	0	0	3	0
N 835 N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	1	1	0	2	3	0	0	2	3	0	2	3	0	2	3
N 836 N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	1	1	0	0	3	0	0	3	0	0	3	0	0	3	0
N 837 N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRRT)	1	0	0	0	3	0	0	3	0	0	3	0	0	3	0

PCT MARS RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUMY PAGE 31

DY-TSK

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
DY-TSK								
N 638 N3-US	DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	1	0	0	0	3	0	0
N 639 N3-U6	DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS	1	1	0	2	0	0	0
N 640 N3-U7	DO YOU USE OR REFER TO INTEGRATING CIRCUITS	2	2	0	4	3	0	0
N 641 N3-U8	DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT	1	0	0	0	3	0	0
N 642 N3-U9	DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT	1	1	0	2	3	0	0
N 643 N3-U10	DO YOU WORK WITH SQUARE WAVE GENERATORS	3	3	0	5	3	3	0
N 644 N3-U11	DO YOU WORK WITH RECTANGULAR WAVE GENERATORS	2	2	0	4	3	3	0
O 645 O1-U1	DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR PRESENT JOB	1	0	0	0	3	0	0
O 646 O1-U2	DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0
O 647 O1-U3	DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0
O 648 O1-U4	DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0
O 649 O1-U5	DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0
O 650 O1-U6	DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE COMPONENTS	1	0	0	0	3	0	0
O 651 O1-U7	DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE SYSTEMS	1	0	0	0	3	0	0
O 652 O1-U8	DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE COMPONENTS	1	0	0	0	3	0	0
O 653 O1-U9	DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS	1	0	0	0	3	0	0
O 654 O1-U10	DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS	1	0	0	0	3	0	0
O 655 O1-U11	DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS	1	0	0	0	3	0	0
O 656 O1-U12	DO YOU PERFORM TASKS ON SSB LC FILTERS	1	0	0	0	3	0	0
O 657 O1-U13	DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS	1	0	0	0	3	0	0
O 658 O1-U14	DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS	1	0	0	0	3	0	0
O 659 O1-U15	DO YOU PERFORM TASKS ON SSB OSCILLATORS	1	0	0	0	3	0	0
O 660 O1-U16	DO YOU PERFORM TASKS ON SSB MIXERS	1	0	0	0	3	0	0
O 661 O1-U17	DO YOU PERFORM TASKS ON SSB DRIVERS	1	0	0	0	3	0	0
O 662 O1-U18	DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS	1	0	0	0	3	0	0
O 663 O1-U19	DO YOU PERFORM TASKS ON SSB HF AMPLIFIERS	1	0	0	0	3	0	0
O 664 O1-U20	DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS	1	0	0	0	3	0	0
O 665 O1-U21	DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS	1	0	0	0	3	0	0
O 666 O1-U22	DO YOU PERFORM TASKS ON SSB DEMODULATORS	1	0	0	0	3	0	0
O 667 O1-U23	DO YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB SYSTEM STAGES	1	0	0	0	3	0	0
O 668 O1-U24	DO YOU USE OR REFER TO SELECTIVE FADING	1	0	0	0	3	0	0
O 669 O1-U25	DO YOU USE OR REFER TO PEAK POWER	1	0	0	0	3	0	0
O 670 O1-U26	DO YOU USE OR REFER TO FREQUENCY STABILITY	1	0	0	0	3	0	0
O 671 O1-U27	DO YOU USE OR REFER TO RESPONSE CURVES FOR BANDWIDTH FILTERS	1	0	0	0	3	0	0
O 672 O1-U28	DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB TRANSMITTERS	1	0	0	0	3	0	0

PCT MBS RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 32

	D-Y-TSK											
	SPC U03	SPC U07	SPC U08	SPC U09	SPC U10	SPC U11	SPC U12	SPC U13	SPC U14	SPC U15	SPC U16	
0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	1	0	0	0	3	0	0	0	0	0	0	0
C 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVING SCHEMATIC DIAGRAMS	1	0	0	0	3	0	0	0	0	0	0	0
C 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	1	0	0	0	5	0	0	0	0	0	0	0
0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS COMPONENTS	1	0	0	0	5	0	0	0	0	0	0	0
C 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
C 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS COMPONENTS	1	0	0	0	5	0	0	0	0	0	0	0
0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
C 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
C 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	1	0	0	0	5	0	0	0	0	0	0	0
0 888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	2	1	0	0	5	0	0	0	0	0	0	0
C 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	1	0	0	0	5	0	0	0	0	0	0	0
0 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKE AND CHARGING DIODES	1	0	0	0	5	0	0	0	0	0	0	0
0 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	1	0	0	0	5	0	0	0	0	0	0	0
0 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	2	1	0	0	5	3	0	0	0	0	0	0
0 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	1	0	0	0	5	0	0	0	0	0	0	0
0 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	1	0	0	0	5	0	0	0	0	0	0	0
C 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	1	0	0	0	5	0	0	0	0	0	0	0
0 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM AMPLIFIERS	1	0	0	0	5	0	0	0	0	0	0	0
C 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	1	0	0	0	5	0	0	0	0	0	0	0
C 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM LF AMPLIFIERS	1	0	0	0	5	0	0	0	0	0	0	0
D 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	1	0	0	0	5	0	0	0	0	0	0	0

**TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING**

ORTS

TASKE GROUP SUMMARY

0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS
 0 930 03-17 DO YOU WORK WITH MARCONI ANTENNAS
 0 931 03-18 DO YOU WORK WITH BRAUDSEID ANTENNAS
 0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS
 0 933 03-20 DO YOU WORK WITH CARDIOTIC ARRAYS
 0 934 03-21 DO YOU WORK WITH COLLINEAR ARRAYS
 0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS
 0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF RADIATION FIELDS WHEN WORKING WITH ANTENNAS
 0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS
 0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS
 0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION
 0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD
 0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED
 0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED
 0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON
 0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR
 0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS
 0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS
 0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS
 0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS
 0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS
 0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS
 0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY
 0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS
 P 953 PI-DI IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES IT IS DEFINED TO INCLUDE LEADS
 P 954 PI-02 DO YOU REFER TO OR USE COPPER LOSS OR I2H LOSS IN TRANSMISSION LINES
 P 955 PI-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES

PCT MARS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 35

CY-TSK	SPC											
	003	007	008	009	010	011	012					
P 456 PI-4 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	1	0	0	0	3	0	0					
P 457 PI-5 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	1	0	0	0	3	0	0					
P 458 PI-6 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	1	0	0	0	3	0	0					
P 459 PI-7 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	2	2	0	0	3	0	0					
P 460 PI-8 DO YOU WORK WITH THIN LEAD TRANSMISSION LINES	2	2	0	0	3	0	0					
P 461 PI-9 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	1	1	0	0	3	0	0					
P 462 PI-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	2	2	0	0	3	0	0					
P 463 PI-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	1	1	0	0	3	0	0					
P 464 PI-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	2	2	0	2	3	0	0					
P 465 PI-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	1	0	0	0	3	0	0					
P 466 PI-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	1	0	0	0	3	0	0					
P 467 PI-15 DO YOU USE OR REFER TO SCHMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	2	2	0	2	3	0	0					
P 468 PI-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	1	0	0	0	3	0	0					
P 469 PI-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	1	0	0	0	3	0	0					
P 470 PI-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH TRANSMISSION LINES WHICH ARE MATCHED	1	0	0	0	3	0	0					
P 471 PI-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	1	0	0	0	3	0	0					
P 472 PI-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	1	0	0	0	3	0	0					
P 473 PI-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	1	0	0	0	3	0	0					
P 474 PI-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	1	0	0	0	3	0	0					
P 475 PI-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	1	0	0	0	3	0	0					
P 476 PI-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	1	0	0	0	3	0	0					
P 477 PI-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	1	0	0	0	3	0	0					
P 478 PI-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	1	0	0	0	3	0	0					
P 479 PI-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	1	0	0	0	3	0	0					
P 480 PI-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF	1	0	0	0	3	0	0					

PCT WORK RESPONDING YES TO ITEMS- SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 36

	DY-TSK	SPC U03	SPC U07	SPC U08	SPC U09	SPC U10	SPC U11	SPC U12
P 981 PI-29 DO YOU WORK WITH NONRESONANT (FLATT) TRANSMISSION LINES	1	1	0	2	3	0	0	0
P 982 PI-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	1	0	0	0	3	0	0	0
P 983 PI-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	1	0	0	0	3	0	0	0
P 984 PZ-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	1	0	0	0	3	0	0	0
P 985 PZ-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 986 PZ-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 987 PZ-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 988 PZ-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 989 PZ-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 990 PZ-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 991 PZ-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	1	0	0	0	3	0	0	0
P 992 PZ-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	1	0	0	0	3	0	0	0
P 993 PZ-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	1	0	0	0	3	0	0	0
P 994 PZ-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	1	0	0	0	3	0	0	0
P 995 PZ-12 DO YOU REMOVE OR INSTALL E BENDS	1	0	0	0	3	0	0	0
P 996 PZ-13 DO YOU REMOVE OR INSTALL H BENDS	1	0	0	0	3	0	0	0
P 997 PZ-14 DO YOU REMOVE OR INSTALL OTHER BENDS	1	0	0	0	3	0	0	0
P 998 PZ-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	1	0	0	0	3	0	0	0
P 999 PZ-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	1	0	0	0	3	0	0	0
P1000 PZ-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	1	0	0	0	3	0	0	0
P1001 PZ-18 DO YOU REMOVE OR INSTALL BI-DIRECTIONAL COUPLERS	1	0	0	0	3	0	0	0
P1002 PZ-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	1	0	0	0	3	0	0	0
P1003 PZ-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	1	0	0	0	3	0	0	0
P1004 PZ-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	1	0	0	0	3	0	0	0
P1005 PZ-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	1	0	0	0	3	0	0	0
P1006 PZ-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	1	0	0	0	3	0	0	0
P1007 PZ-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	1	0	0	0	3	0	0	0
P1008 PZ-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	1	0	0	0	3	0	0	0
P1009 PZ-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	1	0	0	0	3	0	0	0
P1010 PZ-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS	1	0	0	0	3	0	0	0
P1011 PZ-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35	1	0	0	0	3	0	0	0
P1012 PZ-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	1	0	0	0	3	0	0	0
P1013 PZ-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	1	0	0	0	3	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DO-Y-TSK	SPC Q03	SPC 007	SPC 008	SPC 009	SPC U10	SPC 011	SPC 012
P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR	1	0	0	0	3	0	0
P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	1	0	0	0	3	0	0
P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	1	0	0	0	3	0	0
P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	1	0	0	0	3	0	0
P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1021 P2-38 ARE APERTURES (INDOOS OR IRISSES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1022 P2-39 ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	1	0	0	0	3	0	0
P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	1	0	0	0	3	0	0
P1025 P2-42 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO	1	0	0	0	3	0	0
P1026 P2-43 ARE CHOKES JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	1	0	0	0	3	0	0
P1029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	1	0	0	0	3	0	0
P1030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	1	0	0	0	3	0	0
P1031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	1	0	0	0	3	0	0
P1032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	1	0	0	0	3	0	0
P1033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	1	0	0	0	3	0	0
P1034 P2-51 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	1	0	0	0	3	0	0
P1035 P2-52 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	1	0	0	0	3	0	0
P1036 P2-53 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	1	0	0	0	3	0	0
P1037 P2-54 DO YOU USE OR REFER TO LEAD INDUCTORS AND OSCILLATORS	1	0	0	0	3	0	0

PCT MBR'S RESPONDING YES TO ITEMS= SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 38

D-Y-TSK		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
P1038 P3-US DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY		1	0	0	0	3	0	0
P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION		1	0	0	0	3	0	0
P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING		1	0	0	0	3	0	0
P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS		1	0	0	0	3	0	0
P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS		1	0	0	0	3	0	0
P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS		1	0	0	0	3	0	0
P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)		1	0	0	0	3	0	0
P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1047 P3-14 DO YOU WORK WITH MAGNETRONS		1	0	0	0	3	0	0
P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT		1	0	0	0	3	0	0
P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT		1	0	0	0	3	0	0
P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY		1	0	0	0	3	0	0
P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY		1	0	0	0	3	0	0
P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT		1	0	0	0	3	0	0
P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT		1	0	0	0	3	0	0
P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT		1	0	0	0	3	0	0
P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS		1	0	0	0	3	0	0
P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS		1	0	0	0	3	0	0
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER		1	0	0	0	3	0	0
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER		1	0	0	0	3	0	0
P1064 P3-31 DO YOU INSPECT MAGNETRONS		1	0	0	0	3	0	0
P1065 P3-32 DO YOU CLEAN MAGNETRONS		1	0	0	0	3	0	0
P1066 P3-33 DO YOU ADJUST MAGNETRONS		1	0	0	0	3	0	0
P1067 P3-34 DO YOU TUNE MAGNETRONS		1	0	0	0	3	0	0
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS		1	0	0	0	3	0	0
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS		1	0	0	0	3	0	0
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON		1	0	0	0	3	0	0
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS		1	0	0	0	3	0	0
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRON COLLECTOR PLATES		1	0	0	0	3	0	0
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRON CATCHER CAVITIES		1	0	0	0	3	0	0
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRON CATCHER GRIDS		1	0	0	0	3	0	0

PCT WORKS RESPONDING YES TO ITEMS- SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 39

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	1	0	0	0	0	3	0	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	1	0	0	0	0	3	0	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS RUNCHER GRIDS	1	0	0	0	0	3	0	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS RUNCHER CAVITIES	1	0	0	0	0	3	0	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	1	0	0	0	0	3	0	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	1	0	0	0	0	3	0	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLEUR (REFLECTOR) PLATES	1	0	0	0	0	3	0	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	1	0	0	0	0	3	0	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIC CAVITY GAPS	1	0	0	0	0	3	0	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	1	0	0	0	0	3	0	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	1	0	0	0	0	3	0	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	1	0	0	0	0	3	0	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	1	0	0	0	0	3	0	0
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-KLYSTRON OUTPUT LEADS	1	0	0	0	0	3	0	0
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	1	0	0	0	0	3	0	0
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	1	0	0	0	0	3	0	0
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	1	0	0	0	0	3	0	0
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	1	0	0	0	0	3	0	0
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELIAXES	1	0	0	0	0	3	0	0
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	1	0	0	0	0	3	0	0
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	1	0	0	0	0	3	0	0
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENATORS	1	0	0	0	0	3	0	0
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	1	0	0	0	0	3	0	0
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	1	0	0	0	0	3	0	0

PCT MEMS RESPONDING YES TO ITEMS - SELECTED GPS

GPSUM7 PAGE 40

145X GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
P1109 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	1	0	0	0	3	0	0	0
P1109 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	1	0	0	0	3	0	0	0
P1109 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	1	0	0	0	3	0	0	0
P1109 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	1	0	0	0	3	0	0	0
P1109 P3-70 DO YOU PERFORM TASKS ON ANODES	1	0	0	0	3	0	0	0
P1109 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	1	0	0	0	3	0	0	0
P1109 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	1	0	0	0	3	0	0	0
P1109 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	1	0	0	0	3	0	0	0
P1109 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	1	0	0	0	3	0	0	0
P1109 P3-75 DO YOU PERFORM TASKS ON CATHODES	1	0	0	0	3	0	0	0
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	1	0	0	0	3	0	0	0
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	3	2	3	0	5	0	0	0
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	1	1	0	0	5	0	0	0
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	1	1	0	0	5	0	0	0
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	2	1	3	0	5	0	0	0
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	1	0	0	0	3	0	0	0
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	1	0	0	0	3	0	0	0
Q1116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	1	0	0	0	3	0	0	0
Q1117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	2	1	6	0	3	0	5	0
Q1118 Q2-02 DO YOU USE OR REFER TO DELAY LINES	1	0	3	0	3	0	5	0
Q1119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	1	0	0	0	3	0	0	0
Q1120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	1	0	0	0	3	0	0	0
Q1121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	2	0	3	0	5	0	5	0
Q1122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OF MEMORY SYSTEMS	2	0	6	0	3	0	5	0
Q1123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	1	0	3	0	3	0	5	0
Q1124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	1	0	3	0	3	0	5	0
Q1125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	1	0	3	0	3	0	5	0
Q1126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-Analog (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D)	1	0	3	0	3	0	5	0
Q1127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	1	0	0	0	3	0	0	0
Q1128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	1	0	0	0	3	0	0	0

**TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING**

DO-TSK	SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
Q1129 Q3-U4 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	1	0	0	0	3	0	0
Q1130 *3-US DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	0	0	0	3	0	0
Q1131 Q3-U6 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	0	0	0	3	0	0
Q1132 Q3-U7 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	0	0	0	3	0	0
Q1133 Q3-U8 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	1	0	0	0	3	0	0
Q1134 Q3-U9 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER	1	0	0	2	3	0	0
Q1135 *3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	1	0	0	0	3	0	0
Q1136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	1	0	0	0	3	0	0
Q1137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	1	0	0	0	3	0	0
Q1138 *3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	1	0	0	0	3	0	0
Q1139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	1	0	0	0	3	0	0
R1140 RI-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	1	0	0	0	3	0	0
R1141 RZ-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	5	4	6	9	3	0	5
R1142 RZ-U2 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	3	3	3	7	3	0	5
R1143 R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	3	2	6	5	3	0	5
R1144 R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	8	6	14	4	5	3	10
R1145 R3-02 DO YOU FABRICATE COAXIAL CABLES	4	3	8	2	5	0	5
S1146 SI-U1 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	10	8	14	7	8	6	14
S1147 SI-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODE SYSTEMS	2	1	3	0	5	0	5
S1148 SI-U3 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	2	1	3	0	5	0	5
S1149 S2-U1 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	55	55	61	68	35	42	57
S1150 S3-U1 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	6	5	8	9	5	0	5
S1151 S3-U2 DO YOU MEASURE EXCITATION FREQUENCIES	1	1	0	0	5	0	0
S1152 S3-U3 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	3	2	6	4	5	0	5
S1153 S3-U4 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	2	1	3	0	5	0	5
S1154 S3-U5 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	4	3	6	5	5	0	5
S1155 S3-U6 DO YOU USE SERVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	4	2	6	4	5	0	10

PCT MARKS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 42

		SPC 003	SPC 007	SPC 008	SPC 009	SPC 010	SPC 011	SPC 012
D-Y-TSK								
S1156	S3-U7 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	3	2	3	4	5	0	5
S1157	S3-U8 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	2	1	6	0	5	0	5
S1158	S3-U9 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	2	2	3	2	5	0	5
T1155	T1-U1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	2	2	3	2	5	0	5
T1160	T1-U2 DO YOU INSPECT INFRARED SYSTEMS	1	1	0	0	5	0	0
T1161	T1-U3 DO YOU CLEAN INFRARED SYSTEMS	1	1	0	0	5	0	0
T1162	T1-U4 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	1	1	0	0	5	0	0
T1163	T1-U5 DO YOU OPERATE INFRARED SYSTEMS	2	2	3	2	5	0	5
T1164	T1-U6 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	1	1	0	0	5	0	0
T1165	T1-U7 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	1	0	0	5	0	0
T1166	T1-U8 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	1	1	0	0	5	0	0
T1167	T1-U9 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	1	0	0	0	3	0	0
T1168	T1-U10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	1	0	0	0	3	0	0
T1169	T1-U11 DO YOU USE OR REFER TO FAR REGION	1	1	0	2	3	0	0
T1170	T1-U12 DO YOU USE OR REFER TO INTERMEDIATE REGION	1	1	0	2	3	0	0
T1171	T1-U13 DO YOU USE OR REFER TO NEAR REGION	1	1	0	0	3	0	0
T1172	T1-U14 DO YOU USE OR REFER TO MICRON	1	1	0	0	3	0	0
T1173	T1-U15 DO YOU USE OR REFER TO GRAY BODIES	1	1	0	0	3	0	0
T1174	T1-U16 DO YOU USE OR REFER TO BLACK BODIES	1	1	0	0	3	0	0
T1175	T1-U17 DO YOU USE OR REFER TO ABSORPTION	1	1	0	0	3	0	0
T1176	T1-U18 DO YOU USE OR REFER TO SCATTERING	1	1	0	0	3	0	0
T1177	T1-U19 DO YOU USE OR REFER TO ABSOLUTE ZERO	1	1	0	0	3	0	0
T1178	T1-U20 DO YOU PERFORM TASKS ON BLITZ	1	1	0	0	3	0	0
T1179	T1-U21 DO YOU PERFORM TASKS ON TARGET BUTTONS	1	1	0	0	3	0	0
T1180	T1-U22 DO YOU PERFORM TASKS ON ERECTOR LENSES	1	1	0	0	3	0	0
T1181	T1-U23 DO YOU PERFORM TASKS ON OCULAR LENSES	1	1	0	0	3	0	0
T1182	T1-U24 DO YOU PERFORM TASKS ON CORRECTION LENSES	1	1	0	0	3	0	0
T1183	T1-U25 DO YOU PERFORM TASKS ON FILTERS	1	1	0	0	3	0	0
T1184	T1-U26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	1	1	0	0	3	0	0
T1185	T1-U27 DO YOU PERFORM TASKS ON PLANE MIRRORS	1	1	0	0	3	0	0
T1186	T2-U1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	2	1	3	0	5	0	5
T1187	T2-U2 DO YOU INSPECT LASER SYSTEMS	2	0	6	0	3	0	10
T1188	T2-U3 DO YOU CLEAN LASER SYSTEMS	2	0	6	0	3	0	10
T1189	T2-U4 DO YOU OPERATE LASER SYSTEMS	2	0	6	0	3	0	10
T1190	T2-U5 DO YOU OPERATE LASER SYSTEMS	2	0	6	0	3	0	10
T1191	T2-U6 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	2	0	6	0	3	0	10

PCT MARS RESPONDING YES TO ITEMS - SELECTED GPS
 TASK GROUP SUMMARY
 PERCENT MEMBERS PERFORMING

GPSUM7 PAGE 43

		DYS-TSA						SPC					
		003	SPC	007	SPC	008	SPC	009	SPC	010	SPC	011	SPC
T1192	T2-U7 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS	2	0	6	0	3	0	3	0	10			
T1193	T2-U8 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS	1	0	3	0	3	0	3	0	5			
T1194	T2-U9 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS	2	0	6	0	3	0	3	0	10			
T1195	T2-U0 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS	1	0	3	0	3	0	3	0	5			
T1196	T2-U1 DO YUU USE OR REFER TO ANGSTROMS (A)	2	0	6	0	3	0	3	0	10			
T1197	T2-U2 DO YUU USE OR REFER TO ELECTRON ENERGY LEVELS	1	0	3	0	3	0	3	0	5			
T1198	T2-U3 DO YUU USE OR REFER TO GROUND STATE	1	0	3	0	3	0	3	0	5			
T1199	T2-U4 DO YUU USE OR REFER TO EXCITED STATE	1	0	3	0	3	0	3	0	5			
T1200	T2-U5 DO YUU USE OR REFER TO PACKET OF RADIATION	1	0	3	0	3	0	3	0	5			
T1201	T2-U6 DO YUU USE OK REFER TO PHOTONS	1	0	3	0	3	0	3	0	5			
T1202	T2-U7 DO YUU USE OK REFER TO SPONTANEOUS EMISSION	1	0	3	0	3	0	3	0	5			
T1203	T2-U8 DO YUU USE OR REFER TO STIMULATED EMISSION	1	0	3	0	3	0	3	0	5			
T1204	T2-U9 DO YUU USE OR REFER TO INCOHERENCE	2	0	6	0	3	0	3	0	10			
T1205	T2-U0 DO YUU USE OR REFER TO INVERSION LEVEL	1	0	3	0	3	0	3	0	5			
T1206	T2-U1 DO YUU USE OK REFER TO MONOCHROMATIC	2	0	6	0	3	0	3	0	14			
T1207	T2-U2 DO YUU WORK WITH ACTIVE MATERIALS	2	0	6	0	3	0	3	0	10			
T1208	T2-U3 DO YUU WORK WITH PUMPING SOURCES	2	0	6	0	3	0	3	0	10			
T1209	T2-U4 DO YUU WORK WITH FULL SILVERED (100% REFLECTIVE)	1	0	3	0	3	0	3	0	5			
T1210	T2-U5 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE)	2	0	6	0	3	0	3	0	10			
MIRRORS													
T1211	T2-U6 DO YOU WORK WITH HELICAL FLASHTUBES	1	0	3	0	3	0	3	0	5			
T1212	T2-U7 DO YOU WORK WITH RUBY	1	0	3	0	3	0	3	0	5			
T1213	T2-U8 DO YOU WORK WITH HELIUM-NEON	1	0	3	0	3	0	3	0	5			
T1214	T2-U9 DO YOU WORK WITH HELIUM-XENON	1	0	3	0	3	0	3	0	5			
T1215	T2-U0 DO YOU WORK WITH XENON	1	0	3	0	3	0	3	0	5			
T1216	T2-U1 DO YOU WORK WITH CESIUM-HELIUM	1	0	3	0	3	0	3	0	5			
T1217	T2-U2 DO YOU WORK WITH ARGON	1	0	3	0	3	0	3	0	5			
T1218	T2-U3 DO YOU WORK WITH NEODYMIUM IN GLASS	1	0	3	0	3	0	3	0	5			
T1219	T2-U4 DO YOU WORK WITH GALLIUM ARSENIDE	1	0	3	0	3	0	3	0	5			
T1220	T3-U1 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE	0	3	0	3	0	3	0	3	0	5		
T1221	T3-U2 DO YOU INSPECT DVST OR DVST ON HUST	0	3	0	3	0	3	0	3	0	5		
T1222	T3-U3 DO YOU CLEAN DVST OR DVST	0	3	0	3	0	3	0	3	0	5		
T1223	T3-U4 DO YOU ADJUST OR CALIBRATE DVST OR MMST	1	0	3	0	3	0	3	0	5			
T1224	T3-U5 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST	1	0	3	0	3	0	3	0	5			
T1225	T3-U6 DO YOU TROUBLESHOOT DVST OR MMST	1	0	3	0	3	0	3	0	5			
CIRCUITS													
T1226	T3-U7 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS	1	0	3	0	3	0	3	0	5			
T1227	T3-U8 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST	1	0	3	0	3	0	3	0	5			

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DYN-TSK											
	SPC U03	SPC U07	SPC U08	SPC U09	SPC U10	SPC U11	SPC U12	SPC U13	SPC U14	SPC U15	SPC U16	
T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MOST FLOOD GUNS	1	0	0	0	3	0	0	0	0	0	0	0
T1229 T3-10 DO YOU PERFORM TASKS ON WRITE GUNS	1	0	0	0	3	0	0	0	0	0	0	0
T1230 T3-11 DO YOU PERFORM TASKS ON ATTACK GUNS	1	0	0	0	3	0	0	0	0	0	0	0
T1231 T3-12 DO YOU PERFORM TASKS ON ERASE GUNS	1	0	0	0	3	0	0	0	0	0	0	0
T1232 T3-13 DO YOU PERFORM TASKS ON STORAGE GRIDS	1	0	0	0	3	0	0	0	0	0	0	0
T1233 T3-14 DO YOU PERFORM ANY PROGRAMMING	1	0	0	0	3	0	0	0	0	0	0	0
U1234 U1-C1 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING	2	0	0	0	3	0	0	0	0	0	0	0
TASKS												
U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS	1	0	0	0	3	0	0	0	0	0	0	0
U1236 U1-03 DO YOU USE OR REFER TO PROGRAMS	2	0	0	0	3	0	0	0	0	0	0	0
U1237 U1-04 DO YOU USE OR REFER TO HEXIDEIMAL SYSTEMS	1	0	0	0	3	0	0	0	0	0	0	0
U1238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS	1	0	0	0	3	0	0	0	0	0	0	0
U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS	1	0	0	0	3	0	0	0	0	0	0	0
U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS	1	0	0	0	3	0	0	0	0	0	0	0
U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING	1	0	0	0	3	0	0	0	0	0	0	0
U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS	2	0	0	0	3	0	0	0	0	0	0	0
U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS	2	0	0	0	3	0	0	0	0	0	0	0
U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS	2	0	0	0	3	0	0	0	0	0	0	0
U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION WORDS	1	0	0	0	3	0	0	0	0	0	0	0
U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS	1	0	0	0	3	0	0	0	0	0	0	0
U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING	2	0	0	0	3	0	0	0	0	0	0	0
U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING	1	0	0	0	3	0	0	0	0	0	0	0
U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES	1	0	0	0	3	0	0	0	0	0	0	0
U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES	1	0	0	0	3	0	0	0	0	0	0	0
U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS	1	0	0	0	3	0	0	0	0	0	0	0
U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS	2	1	0	0	3	0	0	0	0	0	0	0
U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES	2	1	0	0	3	0	0	0	0	0	0	0
U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES	3	1	0	0	3	0	0	0	0	0	0	0
U1255 U2-01 DO YOU USE DECIFRLS TO EXPRESS AMPLIFICATION AND ATTENUATION	3	3	3	3	3	4	5	3	3	3	3	3
U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS	2	1	3	0	5	0	0	0	0	0	0	0
U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS	2	1	3	0	5	0	0	0	0	0	0	0